



Weeds

VOLUME 6
JANUARY 1958
NUMBER 1

Journal of the Weed Society of America

Weeds

Issued Quarterly by the Weed Society of America

K. P. BUCHHOLTZ, *Editor*, Dept. of Agronomy, Univ. of Wisconsin,
Madison, Wisconsin.

W. C. JACOB, *Business Manager*, Dept. of Agronomy, Univ. of
Illinois, Urbana, Illinois.

EDITORIAL COMMITTEE

R. J. ALDRICH, Crops Protection Research Branch, USDA, Rutgers
Univ., New Brunswick, New Jersey.

O. C. LEE, Dept. of Botany and Plant Pathology, Purdue University,
Lafayette, Indiana.

W. C. ROBOCKER, Crops Protection Research Branch, USDA, State
College of Washington, Pullman, Washington.

E. G. RODGERS, Dept. of Agronomy, University of Florida, Gaines-
ville, Florida.

WEEDS is a quarterly journal published by the Weed Society of America. Editorial offices are located at the University of Wisconsin, Madison, Wisconsin. Printing is by the W. F. Humphrey Press Inc., Geneva, New York. Subscription price is \$6.00 yearly for four issues; single copies \$1.50. Address all communications regarding subscriptions, advertising and reprints to W. C. Jacob, Department of Agronomy, University of Illinois, Urbana, Illinois. Inquiries concerning information on manuscripts and other material for publication should be addressed to the Editorial Offices. All checks, money orders and other remittances should be made payable to the Weed Society of America.

Entered as second-class matter at the post office at Urbana,
Illinois with additional entry at Geneva, New York.

Table of Contents

	<i>Page</i>
Canada Thistle (<i>Cirsium arvense</i> Scop.) Control with Cultivation, Cropping, and Chemical Sprays. Jesse M. Hodgson	1
Factors Affecting Dormancy and Seedling Development in Wild Oats. Thor Kommedahl, James E. DeVay, and Clyde M. Christensen	12
Preliminary Studies of the Root System of <i>Kochia scoparia</i> at Hays, Kansas. W. M. Phillips and J. L. Launchbaugh	19
The Leaching of Monuron from Lakeland Sand Soil. Part II. The Effect of Soil Temperature, Organic Matter, Soil Moisture and Amount of Herbicide. R. P. Upchurch and W. C. Pierce	24
Toxicity and Efficiency of Selected Herbicides on Representative Ornamental Plants. Duncan G. Birdsell, Donald P. Watson and Buford H. Grigsby	34
The Effects of Fresh Water Storage on the Germination of Certain Weed Seeds. III. Quackgrass, Green Bristlegrass, Yellow Bristlegrass, Watergrass, Pigweed, and Halogeton. V. F. Bruns and L. W. Rasmussen	42
The Effects of 2,4-Dichlorophenoxyacetic Acid on Radicle Development and Stem Anatomy of Soybean. M. Rojas-Garciduenas and Thor Kommedahl	49
Control of Annual Bluegrass and Crabgrass in Turf with Fluorophenoxyacetic Acids. Burton R. Anderson and Stanley R. McLane	52
Brief Papers	
A Device for Seeding Greenhouse Flats. J. P. Crowder, Jr. and B. v. Schmelgel	59
Present Use of Herbicides on Highway Areas. John W. Zukel and C. O. Eddy	61
A Rapid Laboratory Method of Screening Herbicides Against Aquatic Plants. W. S. Hardcastle	64
The Effect of Isopropyl N-(3(chlorophenyl) carbamate on the Carbohydrate Content of Soybean Plants. John A. Meade	66
Dalmatian Toadflax—A Possible Rival of Goatweed as a Serious Range Weed. A. W. Lange	68
Report of the Terminology Committee—Weed Society of America	71
News and Notes	77
Sustaining Members	79
Bibliography of Weed Investigations, April to July, 1957	81

Advertisers Index

du Pont de Nemours & Co.	ii
U. S. Borax & Chemical Co.	iii
Chipman Chemical Co.	iv
Spraying Systems Co.	v
Union Carbide Chemicals Co.	vi

For Agriculture and Industry . . .

Du Pont UREA HERBICIDES

***offer new economies
and efficiency in killing
weeds, grass and brush***

"KARMEX" for weed control in asparagus, sugar cane, pineapple, potatoes, grapes, alfalfa, citrus and other crops. Also for irrigation and drainage ditch weed control. Available in two formulations: "Karmex" W monuron and "Karmex" DW diuron.

KARMEX® DL for pre-emergence weed control in cotton.

TELVAR® for industrial weed and grass control. Also in certain areas, it is recommended for brush control. "Telvar" W monuron and "Telvar" DW diuron.

The urea herbicides, products of Du Pont research, kill vegetation through the roots. Their efficiency is demonstrated by the relatively low dosages required to do the job. They can be easily applied, are non-flammable, non-volatile, non-corrosive and extremely low in toxicity.



Better Things for Better Living . . . *Through Chemistry*

E. I. DU PONT DE NEMOURS & CO. (INC.)

GRASSELLI CHEMICALS DEPT.

WILMINGTON 98, DELAWARE

Four
easy
ways to
Destroy
Weeds

1. UREABOR®

A nonselective, granular complex of sodium borate and substituted urea. Low application rates are a feature. Apply with the special new PCB Spreader for best results.

2. DB® Granular

A combination of 2,4-D and sodium borates. Kills deep-rooted, noxious weeds. Low application rates for maximum control with the utmost economy; use the PCB Spreader. (Not intended for control of grass.)

3. POLYBOR-CHLORATE®

Highly soluble; for spray or dry application. It gives a quick knock-down; destroys top growth and roots. A general nonselective herbicide.

4. Concentrated BORASCU®

A nonselective, granular material. Apply by hand or with a mechanical spreader. Long residual action.

When you want Nonselective Herbicides

for Dependable Action

look to United States Borax
& Chemical Corporation

PACIFIC COAST BORAX COMPANY DIVISION



630 Shatto Place, Los Angeles 5, Calif.



ATLACIDE: A chlorate weed killer...widely used for non-selective eradication of bindweed, Canada thistle, quack grass, Johnson grass and other tough perennials. Kills roots...discourages regrowth. Applied as spray or in original dry form.

ATLACIDE WITH 2, 4-D: A combination of Atlacide and 2,4-D acid. Particularly recommended for Canada thistle control.

CHLOREA: A uniform, non-separating combination of sodium chlorate, borate and CMU. Kills all types of weeds and grasses. Combines the proven effectiveness of chlorate on deep-rooted weeds with the soil-surface action of CMU on shallow-rooted grasses and annual seedling growth. Has lasting residual effect to inhibit new growth. Does not create a fire hazard when used as directed. Applied dry or as a water-mixed spray. For industrial, railroad and certain agricultural uses.

CHLORAX "40": A non-separating composition of sodium chlorate and borate...for weed and grass control. Has a lasting residual effect. Does not create a fire hazard. Applied dry or as a spray.

CHLORAX LIQUID: Similar to Chlorax "40"...in liquid form for easy mixing with water.

ATLAS "A": A 40% sodium arsenite solution (4 lbs. arsenic trioxide per gal.). Destroys certain vegetation and algae in ponds and lakes. Controls crabgrass, chickweed and clover in turf. Used as general weed killer and to kill trees and stumps. Also used to kill potato vines prior to harvesting.

SODIUM ARSENITE: A powder containing 75% arsenic trioxide. Used for the same purposes as Atlas "A". Applied dry or as a spray.

2, 4-D WEED KILLERS: A complete line—Available as 2,4-D Amine and 2,4-D Ester liquids; also 2,4-D Ester dusts.

METHOXONE: Contains 2 pounds of MCP sodium salt per gallon. Used for weed control in small grains, flax, rice and grass. Controls same weeds as 2,4-D; considered safer for selective spraying.

Low Volatile 2,4,5-T
 Low Volatile Brush Killer
 Chloro IPC • IPC Liquid

Write for Weed Control Booklets

CHIPMAN CHEMICAL COMPANY, INC.

Chicago, Ill.

BOUND BROOK, N. J.

Portland, Ore.

Palo Alto, Calif.

Pasadena, Tex.

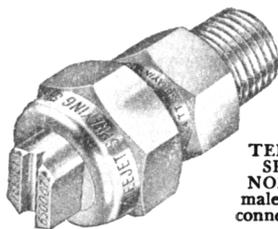
Bessemer, Ala.

Manufacturers of Weed Killers Since 1912

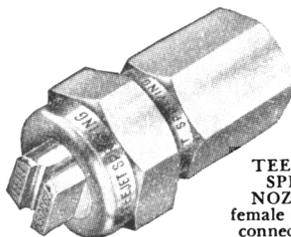


the precision
nozzle for
effective
spraying

Supplied in a full range of interchangeable orifice tip and strainer sizes to meet every capacity requirement. TeeJet Spray Nozzles for Weed Control by spraying make it possible to take maximum advantage of the chemical and sprayer unit. TeeJet nozzles are precision built and provide a flat spray with uniform distribution. Atomization is properly controlled to give coverage with an absolute minimum of driftage. Patented tip design, with set-back orifice opening protects precision orifice from accidental damage. TeeJet spray nozzles are built for use on spray booms and portable sprayers.



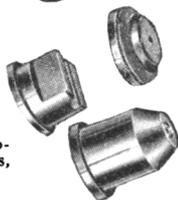
TEEJET
SPRAY
NOZZLE
male pipe
connection



TEEJET
SPRAY
NOZZLE
female pipe
connection

OFF-CENTER SPRAY NOZZLES

Spraying Systems Spray Nozzles with TeeJet tips are supplied in a variety of special body types to meet any unusual spraying requirement. For example, one type of off-center spray nozzle with swivel body provides a flat spray up to 35 feet wide for spraying areas with a single nozzle, that are not accessible with a boom.



INTER-
CHANGE-
ABLE
ORIFICE TIPS
flat and cone
spray types

SUPPLEMENTARY EQUIPMENT

Complete accessories relating to nozzle use are supplied. These include strainers, special nozzle fittings, and hand valve equipment.

TeeJet Spray Nozzles are supplied for Weed Control... as well as all other types of agricultural spraying. For complete information and reference data write for Catalog 30.

SPRAYING SYSTEMS CO.
Engineers and Manufacturers

3296 RANDOLPH STREET

BELLWOOD, ILLINOIS

Make your own tests with these



HERBICIDES

SAMPLES of the CRAG Herbicides listed below are available for experimental purposes.

CRAG Mylone 85W is an easy-to-handle, pre-planting soil fumigant for control of weeds, soil fungi and nematodes. We suggest you test it on **tobacco, vegetable** and **conifer seed beds**. Now commercially used on ornamental propagating beds. No plastic cover is needed.

CRAG DCU 73W has controlled annual grasses up to three months when mixed with the top layer of soil before planting, in tests. We suggest you test it on **sugar beets** and **cucurbits**.

CRAG Sesone is an economical weed-seed toxicant which is activated upon soil contact. We suggest you test it for weed control in growing **peanuts, strawberries, nursery stock, potatoes, asparagus, and corn for seed**.

CRAG AGRICULTURAL CHEMICALS ARE PRODUCTS OF

Union Carbide Chemicals Company

DIVISION OF



CORPORATION

30 East 42nd Street, New York 17, N. Y.

"Crag", "Mylone", "Sesone", and "Union Carbide" are trade-marks of Union Carbide Corporation.

MAIL THIS COUPON NOW

CRAG Agricultural Chemicals
UNION CARBIDE CHEMICALS COMPANY

30 East 42nd Street, New York 17, New York

Please send additional information and your application blank for an experimental sample of CRAG Mylone 85W _____ CRAG DCU 73W _____ and CRAG Sesone _____

Name _____

Address _____

City _____ State _____